

Applicants: RAVI, Ashoke et al.  
Serial No.: 10/608,549  
Attorney Docket No.: P-5781-US

**Amendments to the Claims:**

The following Listing of Claims replaces all prior versions and Listings of Claims in the application:

**Listing of Claims:**

1-28. (Canceled)

29. (Currently Amended) ~~[[The]]~~ An apparatus ~~[[of claim 28,]]~~ comprising:  
a tuning circuit to tune a free-running frequency of at least one of a first slave oscillator, a second slave oscillator and a master oscillator, based on a comparison between a value responsive to a phase of an output of the first slave oscillator and a value responsive to a phase of an input from the master oscillator, said tuning circuit comprising:

a first ~~[[gate]]~~ phase detector to produce a first output signal responsive to the phase-difference between the output of the first slave oscillator and the input from the master oscillator;

a second ~~[[gate]]~~ phase detector to produce a second output signal responsive to the phase-difference between the output of the second slave oscillator and the input from the master oscillator; and

a subtractor to subtract the voltage of said first output signal from said second output signal and to produce a control signal.

30. (Original) The apparatus of claim 29, comprising a loop filter to filter said control signal based on a pre-defined criterion.

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31. (Currently Amended) ~~[[The]]~~ An apparatus ~~[[of claim 28,]]~~ comprising:  
a tuning circuit to tune a free-running frequency of at least one of a first slave oscillator, a second slave oscillator and a master oscillator, based on a comparison between a value responsive to a phase of an output of the first slave oscillator and a value responsive to a phase of an input from the master oscillator, said tuning circuit comprising:  
a first ~~[[gate]]~~ phase detector to produce a first output signal responsive to the phase-difference between the output of the first slave oscillator and the input from the master oscillator; and  
a second ~~[[gate]]~~ phase detector to produce a second output signal responsive to the phase-difference between the output of the first ~~[[gate]]~~ phase detector and the output of the second slave oscillator and to produce a control signal.

32-39. (Canceled)

40. (Currently Amended) ~~[[The]]~~ A wireless communication device ~~of claim 39, wherein the tuning circuit comprises:~~ comprising:  
a dipole antenna to send and receive wireless signals; and  
a tuning circuit to tune a free-running frequency of at least one of a first slave oscillator, a second slave oscillator and a master oscillator, based on a comparison between a value responsive to a phase of an output of the first slave oscillator and a value responsive to a phase of an input from the master oscillator, said tuning circuit comprising:  
a first ~~[[gate]]~~ phase detector to produce a first output signal responsive to the phase-difference between the output of the first slave oscillator and the input from the master oscillator;

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a second ~~[[gate]]~~ phase detector to produce a second output signal responsive to the phase-difference between the output of the second slave oscillator and the input from the master oscillator; and  
a subtractor to subtract the voltage of said first output signal from said second output signal and to produce a control signal.

41. (Currently Amended) ~~[[The]]~~ A wireless communication device of claim 39, wherein the tuning circuit comprises: comprising:

a dipole antenna to send and receive wireless signals; and  
a tuning circuit to tune a free-running frequency of at least one of a first slave oscillator, a second slave oscillator and a master oscillator, based on a comparison between a value responsive to a phase of an output of the first slave oscillator and a value responsive to a phase of an input from the master oscillator, said tuning circuit comprising:

a first ~~[[gate]]~~ phase detector to produce a first output signal responsive to the phase-difference between the output of the first slave oscillator and the input from the master oscillator; and  
a second ~~[[gate]]~~ phase detector to produce a second output signal responsive to the phase-difference between the output of the first ~~[[gate]]~~ phase detector and the output of the second slave oscillator and to produce a control signal.

- 42-45. (Canceled)

46. (New) The wireless communication device of claim 40, comprising a loop filter to filter said control signal based on a pre-defined criterion.

47. (New) A communication system comprising:  
a first communication device able to communicate with a second communication device over a communication channel, the first communication device comprising:

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a tuning circuit to tune a free-running frequency of at least one of a first slave oscillator, a second slave oscillator and a master oscillator, based on a comparison between a value responsive to a phase of an output of the first slave oscillator and a value responsive to a phase of an input from the master oscillator, said tuning circuit comprising:

a first phase detector to produce a first output signal responsive to the phase-difference between the output of the first slave oscillator and the input from the master oscillator;

a second phase detector to produce a second output signal responsive to the phase-difference between the output of the second slave oscillator and the input from the master oscillator; and

a subtractor to subtract the voltage of said first output signal from said second output signal and to produce a control signal.

48. (New) The communication system of claim 47, wherein said tuning circuit comprises a loop filter to filter said control signal based on a pre-defined criterion.

49. (New) A communication system comprising:

a first communication device able to communicate with a second communication device over a communication channel, the first communication device comprising:

a tuning circuit to tune a free-running frequency of at least one of a first slave oscillator, a second slave oscillator and a master oscillator, based on a comparison between a value responsive to a phase of an output of the first slave oscillator and a value responsive to a phase of an input from the master oscillator, said tuning circuit comprising:

a first phase detector to produce a first output signal responsive to the phase-difference between the output of the first slave oscillator and the input from the master oscillator; and

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a second phase detector to produce a second output signal responsive to the phase-difference between the output of the first phase detector and the output of the second slave oscillator and to produce a control signal.